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Dyor

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(54) **LOCATION-BASED NOTIFICATION**

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Related U.S. Application Data

(60) Continuation of application No. 15/445,880, filed on Feb. 28, 2017, now Pat. No. 10,454,870, which is a continuation of application No. 14/305,956, filed on Jun. 16, 2014, now Pat. No. 9,608,955, which is a division of application No. 12/725,402, filed on Mar. 16, 2010, now abandoned.

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H04L 12/58	(2006.01)
H04L 29/08	(2006.01)
G06Q 10/06	(2012.01)

(52) **U.S. Cl.**

CPC ***H04L 51/20*** (2013.01); ***G06Q 10/0631*** (2013.01); ***H04L 51/24*** (2013.01); ***H04L 67/18*** (2013.01)

(58) **Field of Classification Search**

CPC ... H04L 51/20; H04L 12/1822; H04L 65/403; G06Q 10/1095; H04W 4/021; H04W 4/025

See application file for complete search history.

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(Continued)

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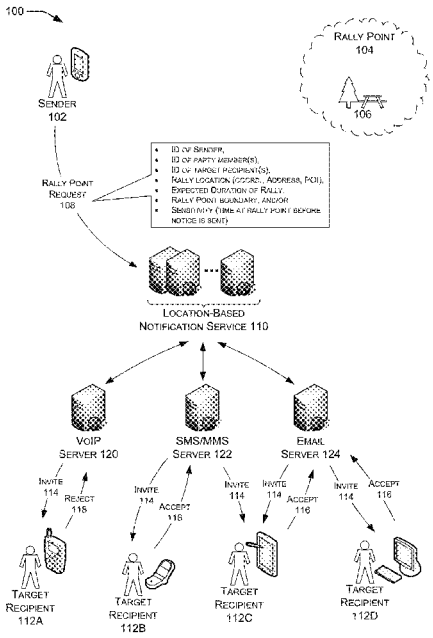
(57) **ABSTRACT**

Location-based notification includes establishment of a rally point and subsequent notification of a user when another user enters the rally point. Senders may set up rally points at various physical locations and specify one or more target recipients that are to be notified when the sender enters the rally point. Target recipients may specify communication settings that dictate whether and/or how they wish to receive notifications under a variety of circumstances. When a sender having a computing device enters a rally point location, a notification is sent from the computing device to a location-based notification service, which notifies each of the target recipients in a manner that complies with the target recipient's individual communication settings.

20 Claims, 8 Drawing Sheets



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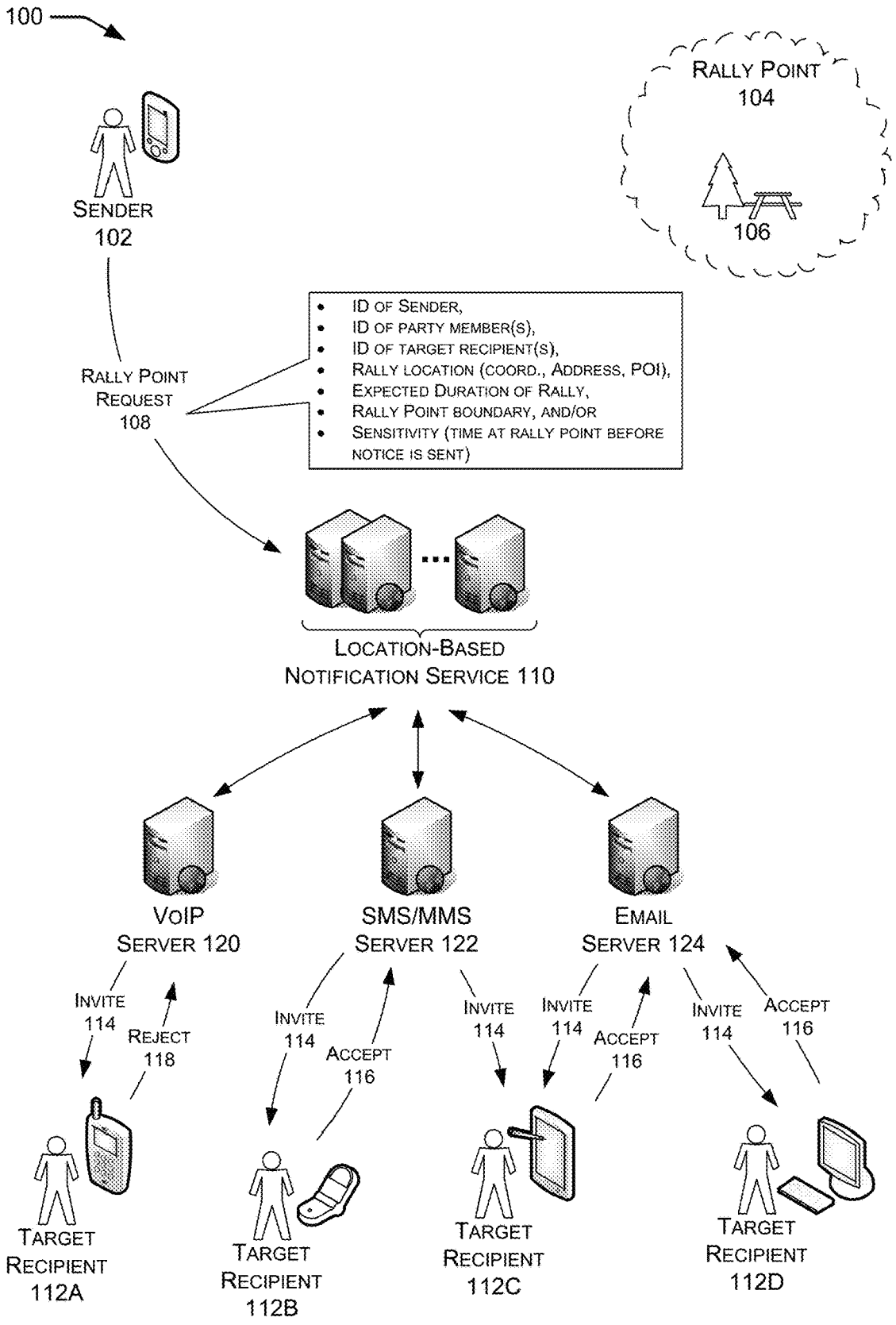

100
RALLY POINT
104
106
SENDER
102
RALLY POINT
REQUEST
108
ID OF SENDER,
ID OF PARTY MEMBER(S),
ID OF TARGET RECIPIENT(S),
RALLY LOCATION (COORD., ADDRESS, POI),
EXPECTED DURATION OF RALLY,
RALLY POINT BOUNDARY, AND/OR
SENSITIVITY (TIME AT RALLY POINT BEFORE NOTICE IS SENT)
LOCATION-BASED
NOTIFICATION SERVICE 110
VoIP
SERVER 120
SMS/MMS
SERVER 122
EMAIL
SERVER 124
INVITE
114
REJECT
118
INVITE
114
ACCEPT
116
INVITE
114
INVITE
114
ACCEPT
116
INVITE
114
ACCEPT
116
TARGET
RECIPIENT
112A
TARGET
RECIPIENT
112B
TARGET
RECIPIENT
112C
TARGET
RECIPIENT
112D

FIG. 1

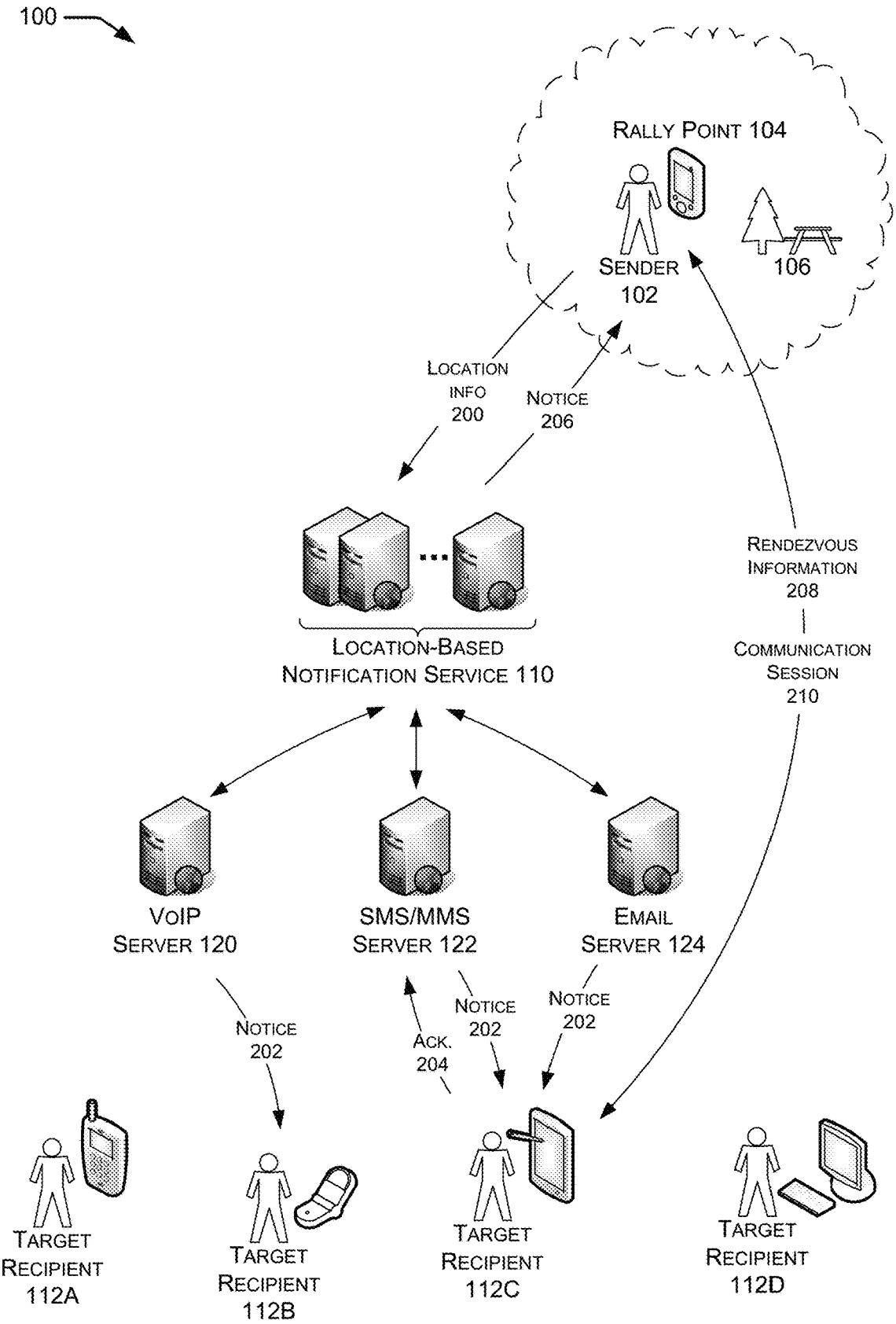

100
RALLY POINT 104
SENDER 102
106
LOCATION INFO 200
NOTICE 206
LOCATION-BASED NOTIFICATION SERVICE 110
RENDEZVOUS INFORMATION 208
COMMUNICATION SESSION 210
VOIP SERVER 120
SMS/MMS SERVER 122
EMAIL SERVER 124
NOTICE 202
ACK. 204
NOTICE 202
NOTICE 202
TARGET RECIPIENT 112A
TARGET RECIPIENT 112B
TARGET RECIPIENT 112C
TARGET RECIPIENT 112D

FIG. 2

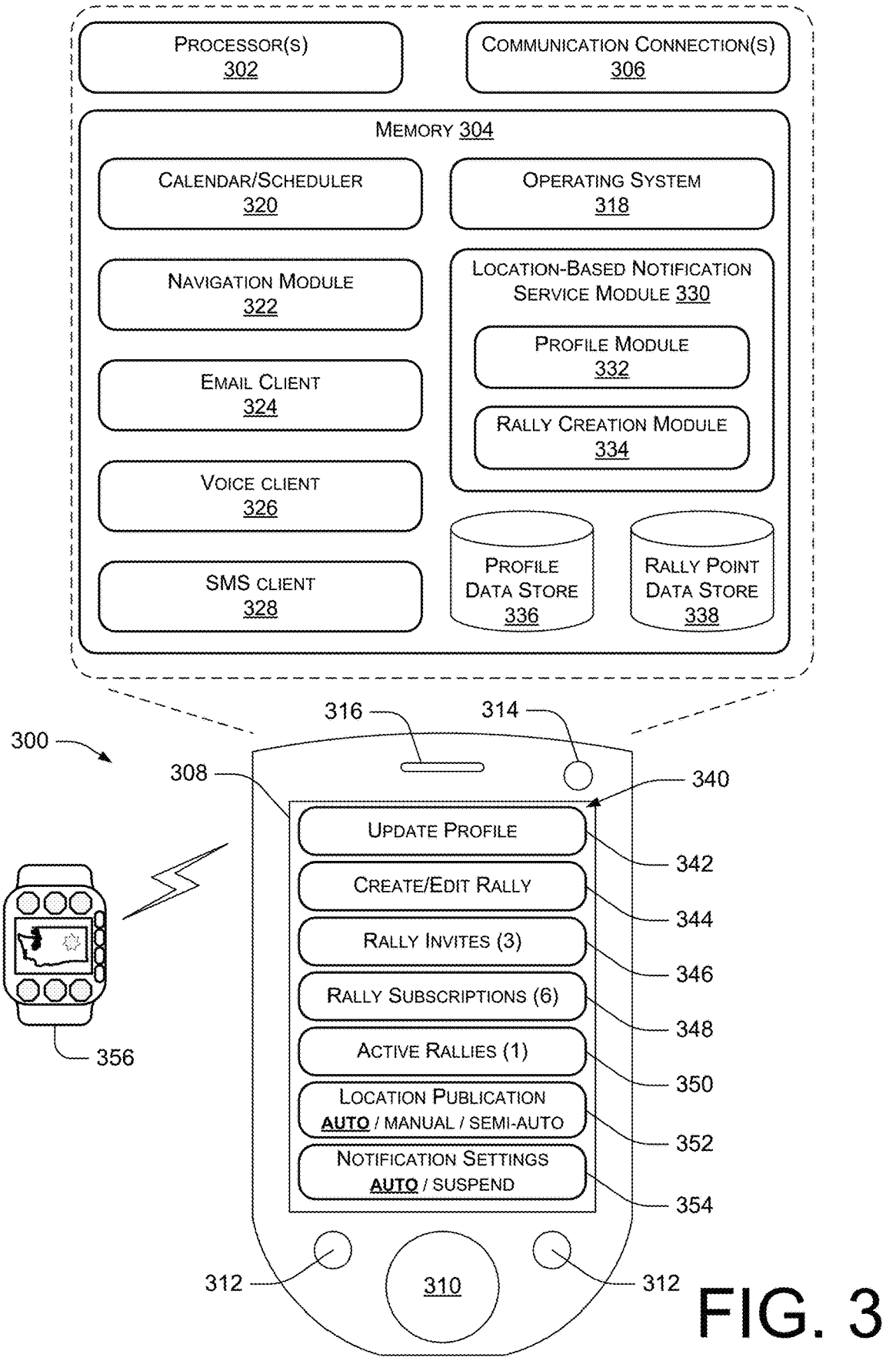

PROCESSOR(S) 302
COMMUNICATION CONNECTION(S) 306
MEMORY 304
CALENDAR/SCHEDULER 320
OPERATING SYSTEM 318
NAVIGATION MODULE 322
LOCATION-BASED NOTIFICATION SERVICE MODULE 330
PROFILE MODULE 332
RALLY CREATION MODULE 334
EMAIL CLIENT 324
VOICE CLIENT 326
SMS CLIENT 328
PROFILE DATA STORE 336
RALLY POINT DATA STORE 338
300
316
314
308
340
UPDATE PROFILE
342
CREATE/EDIT RALLY
344
RALLY INVITES (3)
346
RALLY SUBSCRIPTIONS (6)
348
ACTIVE RALLIES (1)
350
LOCATION PUBLICATION
AUTO / MANUAL / SEMI-AUTO
352
NOTIFICATION SETTINGS
AUTO / SUSPEND
354
356
312
310
312

FIG. 3

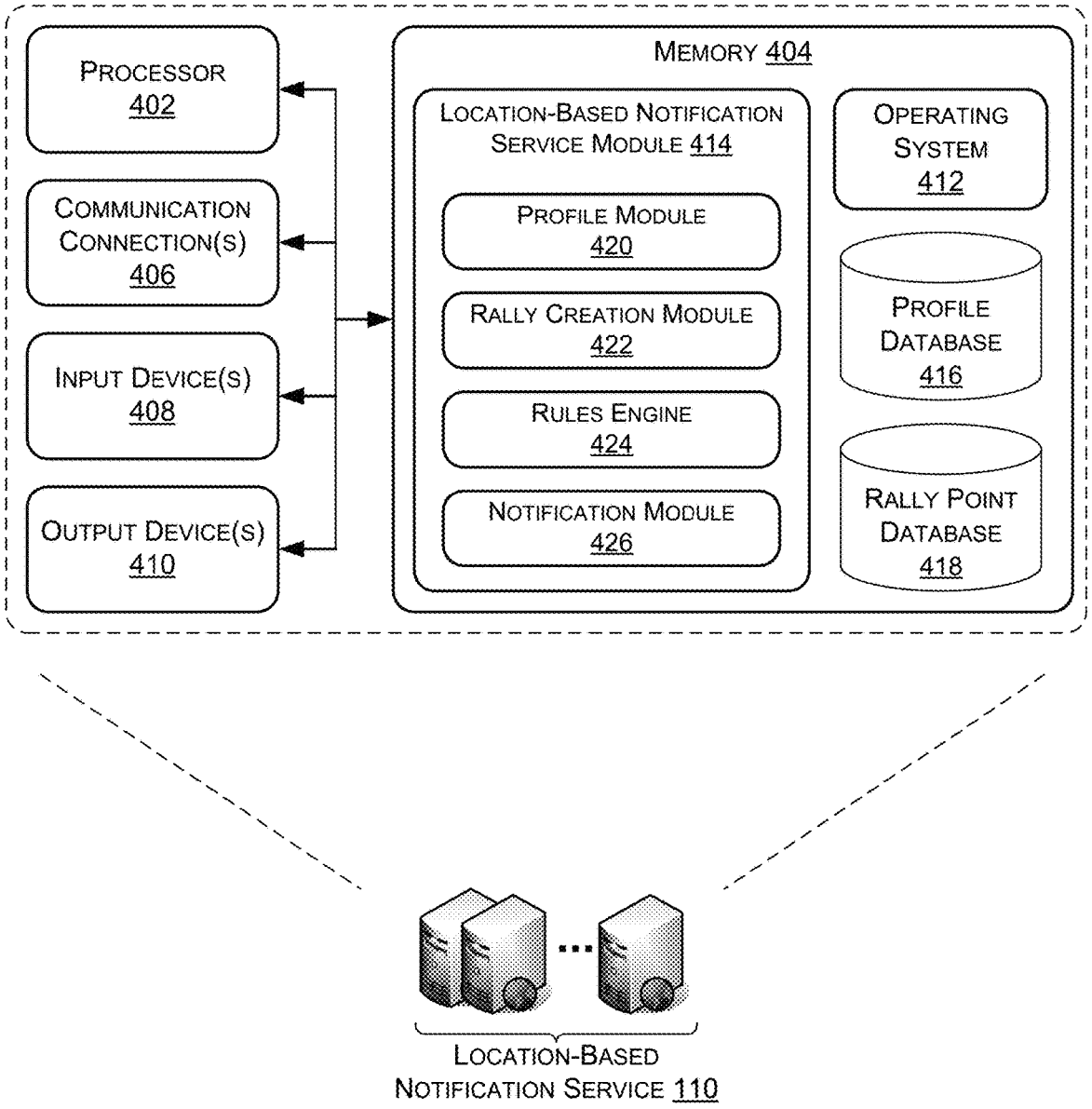
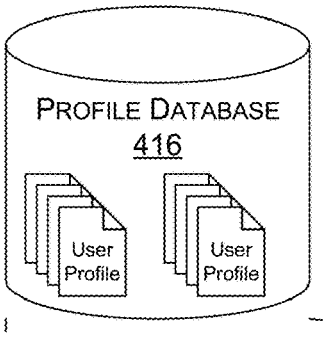

PROCESSOR 402
COMMUNICATION CONNECTION(S) 406
INPUT DEVICE(S) 408
OUTPUT DEVICE(S) 410
MEMORY 404
LOCATION-BASED NOTIFICATION SERVICE MODULE 414
PROFILE MODULE 420
RALLY CREATION MODULE 422
RULES ENGINE 424
NOTIFICATION MODULE 426
OPERATING SYSTEM 412
PROFILE DATABASE 416
RALLY POINT DATABASE 418
LOCATION-BASED NOTIFICATION SERVICE 110

FIG. 4



USER PROFILE 500

ACCOUNT INFORMATION 502

USER NAME: JOE SMITH PASSWORD: *******
EMAIL ADDRESS(ES): JOE@DOMAIN.COM
HOME PHONE: 555-555-5555
MOBILE PHONE: 555-777-7777

SCHEDULE 504

◉ SYNCH WITH CALENDAR
○ CREATE CUSTOM CALENDAR

COMMUNICATION SETTINGS 506

INVITATIONS

◉ ALWAYS VIA: ○ EMAIL ◉ SMS ○ HOME PHONE ○ MOBILE PHONE
○ NEVER
○ BASED ON SCHEDULE AS FOLLOWS:

NOTIFICATIONS

○ ALWAYS
○ NEVER
◉ BASED ON SCHEDULE AS FOLLOWS:

AVAILABLE	○ EMAIL	◉ SMS	◉ HOME PHONE	◉ MOBILE PHONE
WORK	◉ EMAIL	○ SMS	○ HOME PHONE	◉ MOBILE PHONE
BUSY	○ EMAIL	○ SMS	○ HOME PHONE	○ MOBILE PHONE
PARENTING	○ EMAIL	◉ SMS	◉ HOME PHONE	○ MOBILE PHONE
OUT OF TOWN	○ EMAIL	○ SMS	○ HOME PHONE	○ MOBILE PHONE

CURRENT PARTY MEMBERS 508

○ JANE SMITH (SPOUSE)
◉ ADAM SMITH (CHILD)
◉ BETH SMITH (CHILD)
○ BUSTER (DOG)

LOCATION PUBLICATION SETTINGS 510

◉ AUTOMATIC PUBLICATION
○ SEMI-AUTOMATIC PUBLICATION
○ MANUAL PUBLICATION

FIG. 5

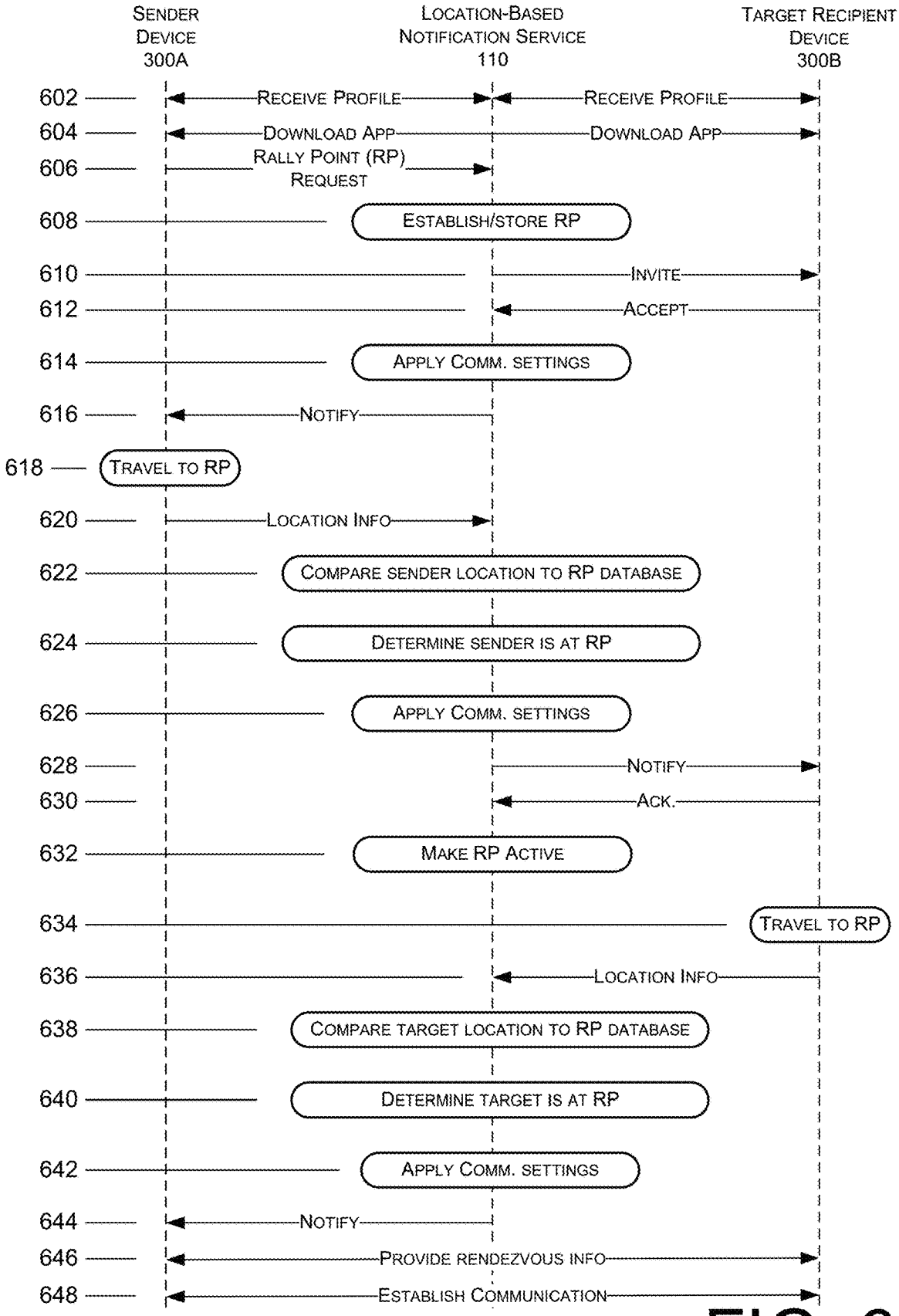

SENDER DEVICE 300A
LOCATION-BASED NOTIFICATION SERVICE 110
TARGET RECIPIENT DEVICE 300B
602
RECEIVE PROFILE
RECEIVE PROFILE
604
DOWNLOAD APP
DOWNLOAD APP
606
RALLY POINT (RP) REQUEST
608
ESTABLISH/STORE RP
610
INVITE
612
ACCEPT
614
APPLY COMM. SETTINGS
616
NOTIFY
618
TRAVEL TO RP
620
LOCATION INFO
622
COMPARE SENDER LOCATION TO RP DATABASE
624
DETERMINE SENDER IS AT RP
626
APPLY COMM. SETTINGS
628
NOTIFY
630
ACK.
632
MAKE RP ACTIVE
634
TRAVEL TO RP
636
LOCATION INFO
638
COMPARE TARGET LOCATION TO RP DATABASE
640
DETERMINE TARGET IS AT RP
642
APPLY COMM. SETTINGS
644
NOTIFY
646
PROVIDE RENDEZVOUS INFO
648
ESTABLISH COMMUNICATION

FIG. 6

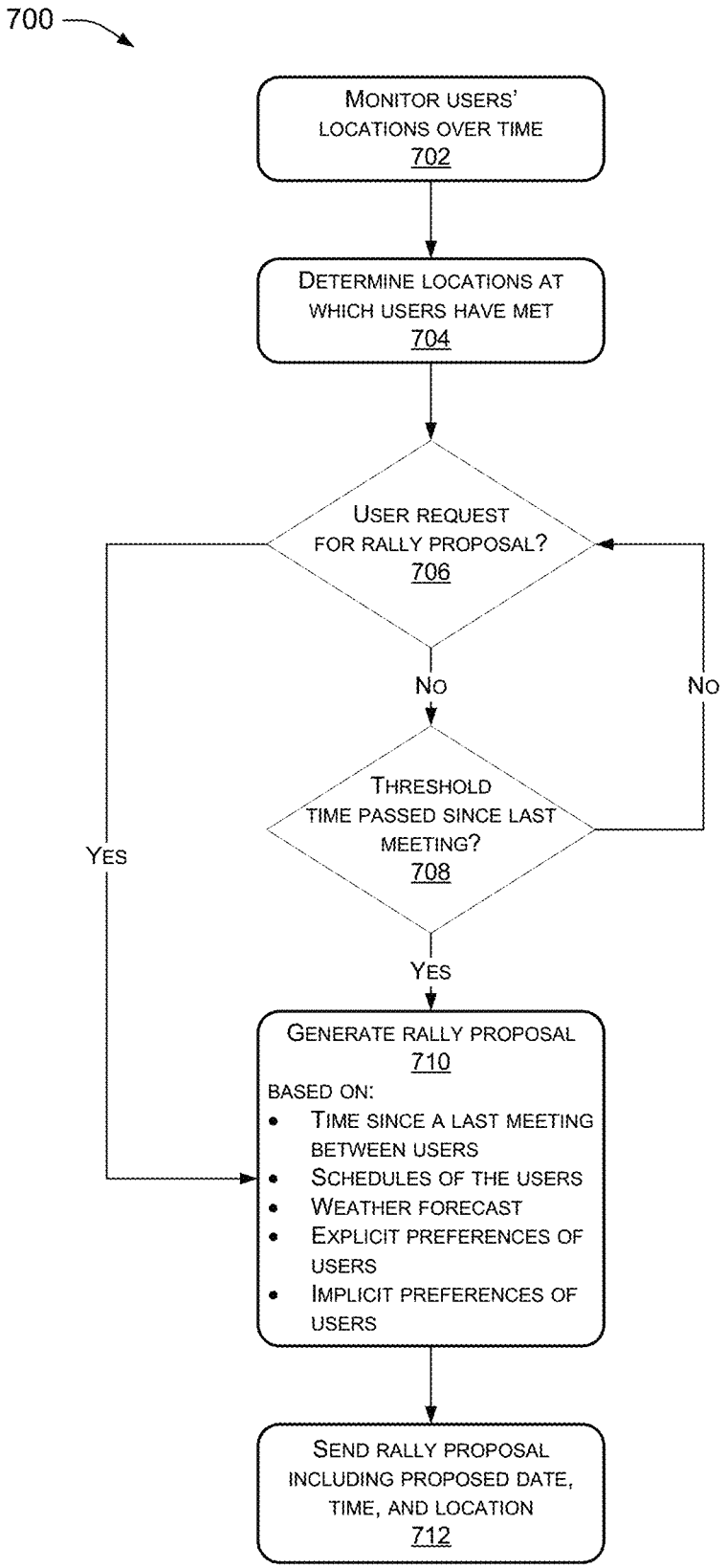

700
MONITOR USERS' LOCATIONS OVER TIME 702
DETERMINE LOCATIONS AT WHICH USERS HAVE MET 704
USER REQUEST FOR RALLY PROPOSAL? 706
NO
NO
THRESHOLD TIME PASSED SINCE LAST MEETING? 708
YES
YES
GENERATE RALLY PROPOSAL 710
BASED ON:
• TIME SINCE A LAST MEETING BETWEEN USERS
• SCHEDULES OF THE USERS
• WEATHER FORECAST
• EXPLICIT PREFERENCES OF USERS
• IMPLICIT PREFERENCES OF USERS
SEND RALLY PROPOSAL INCLUDING PROPOSED DATE, TIME, AND LOCATION 712

FIG. 7

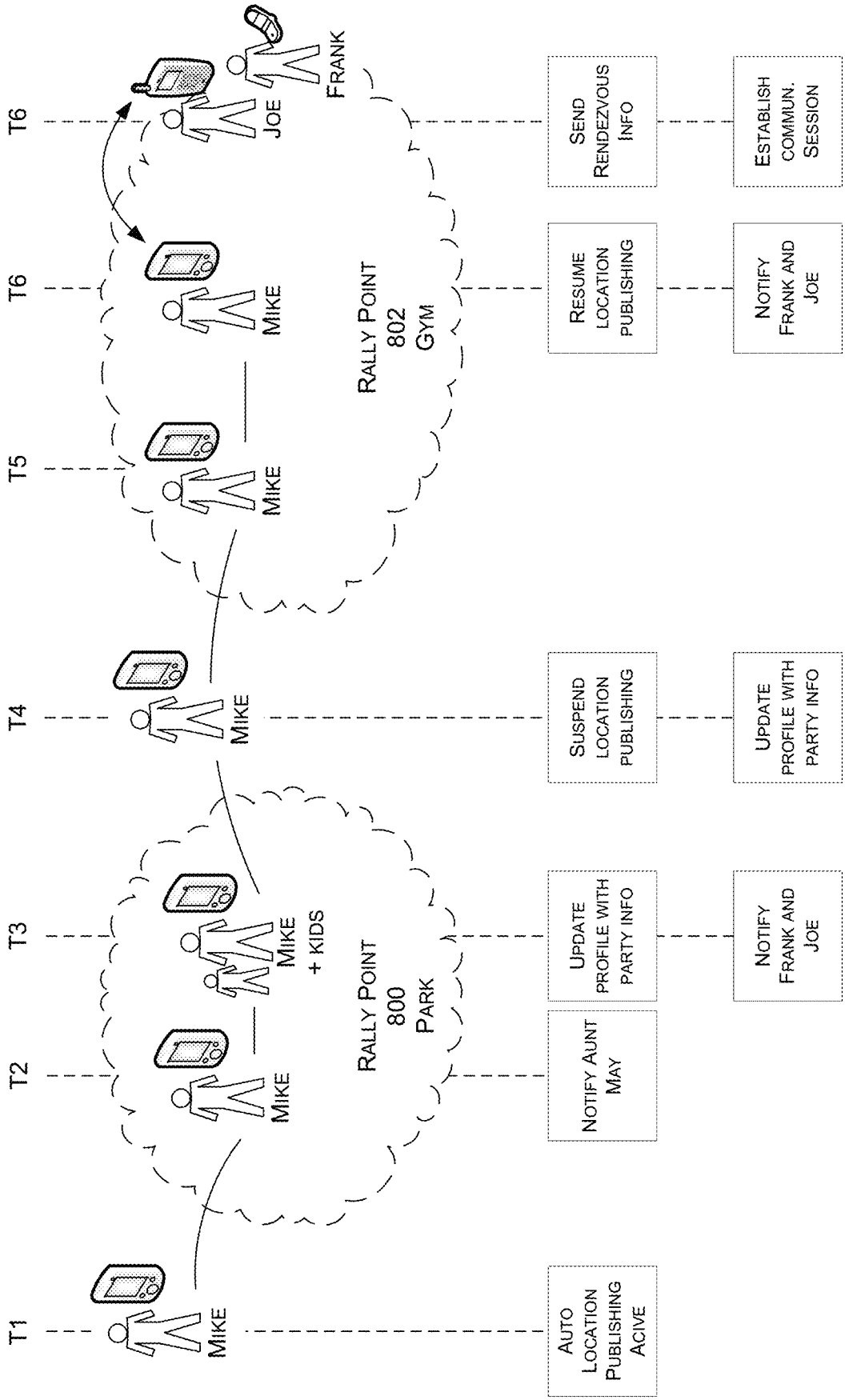

T1
T2
T3
T4
T5
T6
T6
MIKE
MIKE
MIKE
+ KIDS
RALLY POINT
800
PARK
MIKE
MIKE
RALLY POINT
802
GYM
JOE
FRANK
AUTO LOCATION PUBLISHING ACIVE
NOTIFY AUNT MAY
UPDATE PROFILE WITH PARTY INFO
SUSPEND LOCATION PUBLISHING
RESUME LOCATION PUBLISHING
SEND RENDEZVOUS INFO
NOTIFY FRANK AND JOE
UPDATE PROFILE WITH PARTY INFO
NOTIFY FRANK AND JOE
ESTABLISH COMMUN. SESSION

FIG. 8

LOCATION-BASED NOTIFICATION

CROSS-REFERENCES TO RELATED APPLICATIONS

This application is a continuation application of U.S. patent application Ser. No. 15/445,880, filed Feb. 28, 2017, which is a continuation application of U.S. patent application Ser. No. 14/305,956, filed Jun. 16, 2014, now U.S. Pat. No. 9,608,955, which is a divisional application U.S. patent application Ser. No. 12/725,402, filed Mar. 16, 2010, the entire contents of each of which are incorporated herein by reference.

BACKGROUND

With the proliferation of communication devices and systems, people have multiple communication channels by which they can be reached and by which they can reach their contacts. Although these multiple communication channels provide great flexibility, this flexibility comes at the cost of simplicity. For example, if a person (e.g., the sender) wants to meet another group of people, he has to determine which of the multiple communication channels will be effective to reach each of the intended recipients, each of whom may be reachable by a different channel. Alternatively, he can set up plans well in advance, knowing that over time each of the people invited to a gathering (e.g., the targets) is likely access a communication channel (e.g., email) by which the invitation was provided. That is, if the sender sends an email to a group of contacts a week in advance of a planned meeting, it is likely that all of the contacts will access their email accounts during the week regardless of whether the invitation is sent to their personal, work, or other email address.

For certain types of people and for certain types of meetings, however, there is no single effective, efficient, and acceptable communication channel. For example, if a parent wants to notify other parents that his family is at the park, for example, he can email the other parents. This technique is efficient for the sender but may not succeed in notifying the targets in a timely manner. A series of phone calls, on the other hand, may be more effective at notifying the targets, but it is not efficient for the sender and it may be unwanted by the target (e.g., a target may be at work, eating dinner, disinterested in meetings at a particular location, or otherwise not interested in the phone call).

Existing social networking and location tracking services fail to provide appropriate notifications in a manner that reliably gains the target's attention.

BRIEF SUMMARY

This Summary is provided to introduce simplified concepts for location-based notification, which are further described below in the Detailed Description. This summary is not intended to identify essential features of the claimed subject matter, nor is it intended for use in determining the scope of the claimed subject matter. This disclosure relates to location-based notification. Generally, location-based notification includes establishment of a potential meeting location or "rally point" and subsequent notification of a user when another user enters the rally point.

For example, senders may set up rally points at various physical locations and specify one or more intended recipients or "target recipients" that are to be notified when the sender enters the rally point. Target recipients may specify communication settings that dictate whether and/or how they wish to receive notifications under a variety of circumstances. When a sender having a computing device enters a rally point location, a notification is sent from the computing device to a location-based notification service, which notifies each of the target recipients in a manner that complies with his or her individual communication settings.

In another example, a location-based notification service may monitor locations of multiple users over time and propose a rally between the multiple users at a location at which the multiple users have met in the past. The proposals may, for example, be automatically generated after passage of a predetermined amount of time since a last meeting, or may be generated at the request of one or more users.

BRIEF DESCRIPTION OF THE DRAWINGS

The Detailed Description is set forth with reference to the accompanying figures. In the figures, the left-most digit(s) of a reference number identifies the figure in which the reference number first appears. The use of the same reference numbers in different figures indicates similar or identical items.

FIG. **1** is a schematic diagram of an illustrative environment usable to establish rally points for location-based notification.

FIG. **2** is a schematic diagram of the environment of FIG. **1**, showing notification of target recipients when a sender enters a rally point.

FIG. **3** is a block diagram of an illustrative client device usable to interact with a location-based notification service, as well as an illustrative user interface of the client device.

FIG. **4** is a block diagram of an illustrative system usable to implement a location-based notification service.

FIG. **5** is a schematic diagram of an illustrative user profile of a subscriber to a location-based notification service.

FIG. **6** is a system flow diagram showing illustrative processes usable by a sending device, a location-based notification service, and one or more target recipient devices to implement a location-based notification.

FIG. **7** is a flowchart showing an illustrative automated rally point proposal process.

FIG. **8** is a schematic diagram of showing a series of actions of a user and corresponding illustrative actions performed by a location-based notification service in response to the actions of the user.

DETAILED DESCRIPTION

Overview

As noted above, it is often difficult to notify parties of opportunities to meet in a way that is efficient for the scheduling party and effective to get the attention of target recipients. This difficulty is compounded by the fact that the target recipients may not care to receive certain types of notifications and/or may not be interested in being notified of certain opportunities (e.g., if they are at work, eating dinner, disinterested in meetings at a particular location, or otherwise not interested).

This disclosure describes location-based notification that allows senders to establish potential meeting locations or rally points at various physical locations and to specify one or more target recipients (user(s) and/or group(s)) that are to be notified when the sender enters the rally point. Target recipients may specify communication settings that dictate whether and how they wish to receive communications (e.g.,

via email, text message, voice message, or multimedia message), including filters based on rally point, sender, people with the sender, time of day, and/or status of the target recipient. At a later time (e.g., next day, next month), when a sender having a computing device enters a rally point location, a notification is sent from the computing device to a location-based notification service, which notifies each of the target recipients in a manner that complies with his or her individual settings. Thus, senders are able to easily convey opportunities to meet in a way that is effective to alert interested target recipients of the opportunity.

Illustrative Location-Based Notification Environment

FIGS. **1** and **2** are schematic diagrams of an illustrative environment **100** usable to implement location-based notification. Specifically, FIG. **1** illustrates establishment of rally points and FIG. **2** illustrates subsequent notifications based on the rally points. The various computing devices, services, and servers shown in FIGS. **1** and **2** are communicatively coupled by a wired and/or wireless communication network (not shown). By way of example and not limitation, the communication network may include the Internet, one or wide area networks (WANs), local area networks (LANs), and/or personal area networks (PANs), and the various components of FIG. **1** may be coupled to the communication network using known communication connections and protocols.

Referring to FIG. **1**, a sender **102** uses a computing device to establish a rally point **104** at a physical location—in this case a park **106**—by sending a rally point request **108** to a location-based notification service **110**. The rally point request **108** includes information usable by the location-based notification service **110** to establish a rally point, such as an identification of the sender, one or more target recipients **112**A-**112**D (collectively **112**) that are to be notified of the rally point, and a location of the rally. The identification of the sender **102** may include a name of the sender, a username the sender uses to log in to the location-based notification service, an email address of the sender, a telephone number of the sender, an identifier of a computing device associated with the sender in a user profile of the sender, or any other information usable to identify the sender of the rally point request **108**. Any of the types of identifying information listed above for the sender **102** may also be used to identify the target recipients **112**. The location of the rally point may be given by geographical coordinates of the location (e.g., longitude and latitude), a street address, and/or a point of interest (e.g., "central park" or a unique identifier that corresponds to the "central park" location). In some embodiments, the rally point request **108** may additionally or alternatively include, for example, an identification of party members that are likely to accompany the sender to the rally point, an expected duration of the rally, a radius or other boundary of the rally point, and/or a sensitivity of the rally point (e.g., an amount of time at the rally point before a notification is sent).

Once the rally point **104** is established, the rally point request **108** (or the information contained within it) may be stored in a rally point database of the location-based notification service **110**. The location-based notification service **110** then sends invitations **114** to the target recipients **112** to subscribe to the rally point. The invitations **114** may be sent in accordance with communication settings specified in user profiles of the target recipients. The communication settings may dictate whether and how (e.g., email, text message, voice message, or multimedia message) notifications are to be received. User profiles may also specify different communication settings to be applied based on type of communication (e.g., invitation vs. notification), rally point, sender, people with the sender, time of day, status of the target recipient, or the like. General communication settings may be stored in a profile database at the location-based notification service **110**, locally on a computing device of the user (sender or target recipient, respectively), or both. In some embodiments, temporary communication settings (e.g., a "do not disturb" setting) may augment or modify general communication settings.

If a target recipient **112** has not established communication settings and/or is not a member of the location-based notification service **110**, the invitation **114** may be sent using a default communication mode (e.g., email), and may include a prompt or link for the target recipient **112** to create an account, activate an account, and/or establish/manage communication settings with location-based notification service **110** and/or to establish communication settings.

Upon receiving the invitation **114**, a target recipient **112** may subscribe to the rally point by sending an acceptance **116**. The acceptance may include updated profile information for the target recipient **112**. In the event that the target recipient **112** was not previously a member of the location-based notification service **110**, the acceptance **116** may include account creation information, user profile information, and/or communication settings. A target recipient **112** may choose not to subscribe to the rally point, and consequently not receive any notifications relating to the rally point, by sending a rejection **118** of the invite or ignoring the invite.

In the example shown in FIG. **1**, communication settings for the target recipients specify that target recipient **112**A is to receive rally invitations as voice calls placed to a home telephone number, target recipient **112**B is to receive rally invitations as voice calls placed to a mobile telephone number, target recipient **112**C is to receive rally invitations as text messages to a mobile telephone number and as emails, and target recipient **112**D is to receive rally invitations as emails. Based on these communication settings, a rules engine of the location-based notification service **110** directs a voice over internet protocol (VoIP) server **120** to send an invitation **114** to a home telephone number of target recipient **112**A in the form of a recorded voice message. The rules engine directs a simple message service (SMS) and/or multimedia message service (MMS) server **122** to send invitations **114** to mobile telephone numbers of target recipients **112**B and **112**C in the form of text messages or multimedia messages. The rules engine also directs an email server **124** to send email invitations **114** to email addresses of target recipients **112**C and **112**D.

Target recipients **112**B, **112**C, and **112**D each subscribe to the rally point by sending acceptances **116** of the respective invitations **114**. Target recipient **112**A, however, declined the rally point by sending a rejection **118** of the invite **114**.

FIG. **2** illustrates the environment **100** at a time subsequent to that shown in FIG. **1**. As shown in FIG. **2**, the sender **102** has moved toward the park **106** and has entered the rally point **104**. A computing device of the sender **102** sends location information **200** to the location-based notification service **110**. The location information **200** may be sent automatically by the computing device (e.g., periodically or in response to movement of the computing device), manually at the request of the sender **102**, or semi-automatically after requesting approval of the sender **102**. Regardless of the location publication settings, before any location infor-

mation is sent for a first time, the sender may be asked for affirmative consent to provide the information before the data is collected (e.g., during account set up, upon startup of an application, at a first instance of publication, etc.). The same consent may be obtained from target recipients as well.

Upon receiving the location information **200**, location-based notification service **110** compares the current location of the sender **102** to locations of rally points with which the sender **102** is associated, and determines that the sender **102** has entered the rally point **104**. Alternatively, the determination that the sender **102** has entered the rally point **104** may be made locally by the sender's mobile device. In that case, the location information **200** may include an affirmative indication that the sender **102** has entered the rally point **104**. Again, the location information **200** may be sent automatically (e.g., in response to the mobile device determining that it has entered a rally point location and/or the sender's mobile device periodically sending location updates), manually (e.g., by a sender selectively publishing his location), or semi-automatically (e.g., by presenting the sender with an option to initiate a notification and providing default information based on information the user specified in the rally point request). In addition to or instead of the automatic, manual, and semi-automatic location updates to the location-based notification service **110**, the sender may activate a rally point manually (e.g., independent of location information). For example, a sender may manually activate a rally point using a mobile device that cannot provide or cannot efficiently determine location information, or a sender may want to activate and/or propose a rally point at a location different than the sender's current location. The sender **102** may also provide additional information, such as confirming or modifying the default information (e.g., duration of visit, people with the sender, attaching a recorded voice and/or video message, etc.).

The location-based notification service **110** then determines which target recipients should be notified. For example, the location-based notification service **110** may query a database to determine which users have subscriptions to a rally point owned by the sender **102** having a location corresponding to the sender's present location and/or manually activated by the sender. For automated and semi-automated notifications, the sender's mobile device and/or the location-based notification service **110** may wait a predetermined time (e.g., the sensitivity period) before initiating/prompting for a notification to prevent a notification from being sent or the sender being prompted as the sender is passing through a rally point location. The location-based notification service **110** then proceeds to determine whether (yes or no) and how (using what communication mode) to notify the target recipients **112** subscribed to the rally point **104** based on their respective communication settings for notifications (which may or may not be the same as their communication settings for invitations).

In the example shown in FIG. **2**, target recipient **112**A does not receive a notification since he rejected the invitation **114** in FIG. **1**. Target recipient **112**B receives a notification **202** at her mobile device from VoIP server **120**, which is a different mode of communication than the text message invite **114** she received from the SMS/MMS server **122**. Target recipient **112**C receives text message and email notifications **202** from SMS/MMS server **122** and email server **124**, respectively. Target recipient **112**D also does not receive a notification, since she is in a meeting and her communication settings specify that she does not care to receive notifications while in meetings. Thus, even though she accepted the invite **114**, the location-based notification service **110** will not send target recipient **112**D a notification while she is in the meeting. The location-based notification service **110** may notify target recipient **112**D when the meeting ends and may take into account various parameters, including the remaining duration of the visit, whether the location-based notification service **110** has determined that people have arrived and/or remain at the location, or other parameters.

After receiving the notice **202** of the rally, each of the target recipients **112** may "activate" the rally point with respect to the target recipient by, for example, sending an acknowledgement **204** of the rally notification, entering the rally point, and/or traveling toward the rally point. The sender **102** may receive a notification **206** when a rally point becomes active for the target recipient. Once a rally point is active, the location-based notification service **110** may facilitate sharing of rendezvous information **208** between the sender **102** and a target recipient **112** (e.g., target recipient **112**C in FIG. **2**) to help the users locate one another at the rally point **104**. Examples of rendezvous information **204** include, without limitation, compass information, a directional arrow pointing in the direction of the other user, a distance separating the users, a photograph of the user and/or surroundings, a map that depicts the location of the sender and the target recipients who have activated the rally point. Additionally or alternatively, a map may be provided of the sender and all target recipients who have acknowledged a rally point request, are at the rally point, or are en route to the rally point. The foregoing rendezvous information may be provided or enhanced through the use of global positioning satellite (GPS) data, WiFi signals, Bluetooth® signals, and/or other signals that may be used to determine, estimate, or predict location of the sender and target recipients and/or the sender and/or target recipient devices. Additionally or alternatively, the location-based notification service **110** may establish a communication session **210** (e.g., phone call, video chat, instant message session, etc.) between the sender **102** and the target recipient **112** to further aid the users in locating one another. The location-based notification service **110** may prompt the sender **102** to establish the call, may prompt the target recipient **112** to initiate the call, or may automatically initiate the call to both parties.

Illustrative Client Device

FIG. **3** is a block diagram of an illustrative client device **300** that may be used to interact with a location-based notification service, such as the location-based notification service **110** of FIGS. **1** and **2**. The client device **300** is illustrative of devices used by senders **102**, target recipients **112**, and any other users of a location-based notification service. The client device **300** may be configured as any suitable computing device capable of interacting with and/or partially implementing a location-based notification service. By way of example and not limitation, suitable computing devices may include personal computers (PCs), laptops, mobile telephones, home telephones, personal data assistants (PDAs), tablet PCs, set top boxes, or any other device capable of interacting with and/or partially implementing a location-based notification service.

In one illustrative configuration, the client device **300** comprises a processor **302** and memory **304**. Memory **304** may store program instructions that are loadable and executable on the processor **302**, as well as data generated during or used in connection with execution of these programs.

The client device **300** may also contain communications connection(s) **306** that allow the client device **300** to communicate with the location-based notification service **110** and/or other client devices on the network. The client device

300 may also include input devices, such as a keyboard, mouse, pen, voice input device, touch input device, etc., and output devices, such as a display, speakers, printer, etc. coupled communicatively to the processor and memory. In the Example shown in FIG. 3, the client device 300 includes a touch screen display 308 which serves as both an input and an output, a thumb pad 310 input, a pair of input buttons 312, a camera 314, and a speaker 316.

Turning to the contents of the memory 302 in more detail, the memory 302 may include an operating system 316, a calendaring or scheduling application 320, and a navigation module 322. The calendaring or scheduling application 320 may contain data and time information, event information, and/or schedule information of a user of the client device 300. The navigation module 322 may include mapping software, GPS navigation capabilities in combination with a GPS antenna (not shown), a compass, and various other navigation functionalities. The memory 302 may also include an email client 324, a voice client 326, and a text/multimedia messaging client 328, to implement email, voice communications, and text/multimedia messaging, respectively.

The memory 302 also includes a location-based notification service module 330, which provides an interface with the location-based notification service 110. The location-based notification service module 330 may merely provide an interface by which a user of the client device 300 can interact with the location-based notification service 110, or it may include some of the functionality to implement that service. In the embodiment shown in FIG. 3, the location-based notification service module 330 includes a profile module 332 and a rally creation module 334. The profile module 332 includes logic to allow a user to update his or her profile information stored in a local profile data store 336 and/or remotely in a profile database of the location-based notification service 110. The rally creation module 334 includes logic to allow a user to establish, edit, and manage rally points, and to store the rally points in a local rally point store 338 and/or a remote rally point database of the location-based notification service 110.

The location-based notification service module 330 further is configured to present a user interface 340 on the touch screen display 308. The user interface 340 presents a "user profile" control 342 that allows a user to update their user profile information via the profile module 332, and a "create/edit rally" control 344 that allows the user to establish, edit, and manage rally points via the rally creation module 334. The user interface 340 also includes a "rally invites" control 346 that shows a number of received rally invites (in this case three) to which the user has not yet responded, a "rally subscriptions" control 348 that shows a number of rallies to which the user is subscribed (in this case six), and an "active rallies" control 350 that shows a number of active rallies that the user is currently participating in (in this case one). User selection of any of controls 346-350 results in display of a list of the respective rallies and additional details of each (e.g., sender, target recipients, duration, location, directions, etc.).

The user interface 340 further includes a "location publication" control 352, which allows a user to control publication of his or her location information. For example, the user can set the location publication control 340 to automatically publish location information periodically, in response to a change in location, or according to any other publication scheme. Alternatively, the user can set the publication control 340 to semi-automatic mode in which the user is prompted before the user's location is published, or the user can set the publication control 340 to a manual mode requiring manual user input to update the location. In the manual mode, a special purpose button may be designated to update the user's location with the location-based notification service 110. For example, in FIG. 3, one or both of buttons 312 may be designated as special purpose location update buttons. In another example, a predetermined, special purpose gesture (e.g., a swipe of a finger across location publication control 352) may be configured in addition to or instead of the special purpose button to update the location information. If a user does not provide automatic location updates, the user may push the location button or perform the special purpose gesture and a particular application or a set of applications or services (local or remote) may be provided with updated information. This information update may, for example, cause a rally to be initiated.

Still further, the user interface 340 may include a "notification" control 354 usable to temporarily suspend notifications (e.g., while in meetings or at the movies). The notification control 354 may be used to provide temporary communication settings, and the user may still update his or her general communication settings via the update profile control 342.

In addition to the inputs and outputs described above, one or more peripherals may be coupled to the client device 300 and may serve as additional inputs and/or outputs. In one specific embodiment, a watch 356 may be wirelessly coupled to the client device 300 to serve as a notification interface of the client device 300. For example, when a notification is received, the watch 356 may vibrate, make a sound and/or display a brief set of information about an ongoing rally (or suggest initiating or activating a rally). The watch 356 may also be used to reply to a notification (e.g., to respond that the target recipient is going to attend). The watch 356 may be part of a mobile communication system. For example, the watch 356 may work in combination with a mobile phone client device 300 via a wireless connection to form a wireless personal area network. In this embodiment, a button on the watch 356 may be used to initiate a rally, reply to a notification, or otherwise interact with the location-based notification service 110.

FIG. 3 illustrates an embodiment in which the location-based notification functionality is split between the client device 300 and the remote location-based notification service 110. However, in other embodiments, the location-based notification functionality may be implemented entirely by remote location-based notification service 110 (e.g., as a web services application), or may be implemented entirely by applications running on a plurality of peer-to-peer client devices.

Illustrative Location-Based Notification Service

FIG. 4 is a block diagram of an illustrative system usable to implement a location-based notification service, such as the location-based notification service 110 of FIGS. 1 and 2. The location-based notification service 110 may be configured as any suitable computing device capable of implementing a location-based notification service. By way of example and not limitation, suitable computing devices may include personal computers (PCs), servers, server farms, datacenters, or any other device capable of storing and executing all or part of the location-based notification service.

In one illustrative configuration, the location-based notification service 110 comprises one or more processors 402 and memory 404. The location-based notification service 110 may also contain communications connection(s) 406

that allow the location-based notification service **110** to communicate with client devices and/or other devices on the network. The location-based notification service **110** may also include one or more input devices **408**, such as a keyboard, mouse, pen, voice input device, touch input device, etc., and one or more output devices **410**, such as a display, speakers, printer, etc. coupled communicatively to the processor and memory.

Depending on the configuration and type of computing device, memory **404** of the location-based notification service **110** and memory **304** of the client device **300** may include volatile (such as random access memory (RAM)) and/or non-volatile (such as read-only memory (ROM), flash memory, etc.). Memories **304** and **404** may also include additional removable storage and/or non-removable storage including, but not limited to, magnetic storage, optical disks, and/or tape storage that may provide non-volatile storage of computer readable instructions, data structures, program modules, and other data for the location-based notification service **110** and the client device **300**, respectively.

Memories **304** and **404** are examples of computer-readable storage media. Computer-readable storage media includes, but is not limited to, volatile and non-volatile, removable and non-removable media implemented in any method or technology for storage of information such as computer-readable instructions, data structures, program modules or other data. In some examples, computer-readable media comprises non-transitory, tangible media. Additional types of computer-readable storage media that may be present include, but are not limited to, phase change memory (PRAM), SRAM, DRAM, other types of RAM, ROM, electrically erasable programmable read-only memory (EEPROM), flash memory or other memory technology, compact disc read-only memory (CD-ROM), digital versatile disks (DVD) or other optical storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any other medium which can be used to store the desired information and which can be accessed by the location-based notification service **110** and the client device **300**, respectively. Combinations of any of the above should also be included within the scope of computer-readable storage media.

Turning now to the information stored in memory **404**, the memory **404** may store program instructions that are loadable and executable on the processor **402**, as well as data generated during the execution of and/or usable in conjunction with these programs. In the illustrated example, memory **404** stores an operating system **412**, a location-based notification service module **414**, a profile database **416**, and a rally point database **418**. The location-based notification service module **414** further includes a profile module **420**, a rally creation module **422**, a rules engine **424**, and a notification module **426**. In distributed embodiments, the profile module **420** and the rally creation module **422** may serve as interfaces to communicate with counterpart modules **332**, **334** of the client device **300**. However, in purely web-based embodiments, the profile module **420** and rally creation module **422** may simply perform the functions of the described above for the profile module **332** and rally creation module **334**, thereby obviating the need for the client side location-based notification service module entirely. In that case, the profile module **420** and the rally creation module **422** may be configured to render user interface screens such as user interface **340** in FIG. **3**, and to serve those screens to a user via the network. The profile module **420** and rally creation module **422** would also include the backend functionality needed to create and edit user profile information and rally point information stored in the profile database **416** and rally point database **418**.

The rules engine **424** controls flow of communications between senders and target recipients. For example, the rules engine **424** may query the rally point database **418** to determine which users have subscriptions to a rally point owned by the sender having a location corresponding to the sender's present location. The rules engine **424** may then query the profile database **416** to determine whether (yes or no) and by what communication channel (modality) the notification should be sent to the target recipients based on the target recipients' general and temporary communication settings. The notification module **426** then notifies each of the target recipients according to their individual communication settings.

Illustrative User Profile Information

FIG. **5** is a schematic diagram of an illustrative user profile **500** of a subscriber to a location-based notification service. As shown in FIG. **5**, user profile **500** is but one of many user profiles stored in the user profile database **416** of the location-based notification service **110**. Some or all of user profile **500** may additionally or alternatively be stored in profile data store **336** of the client device **300**. User profile **500** is typical of a sender user profile as well as a target recipient user profile. The user profile would typically be created at the time a user subscribed to the location-based notification service, and updated periodically thereafter.

As shown in FIG. **5**, the user profile **500** includes account information **502**, such as a username, password, email address(es), and telephone number(s) for the user.

The user profile **500** includes a schedule **504** designating the user's availability and status (e.g., free/busy, work, meeting, with family, out of town, etc.). The schedule **504** may allow a user to leverage an existing calendar or scheduling application by synching with the existing calendar or scheduling application, such as a calendar in Microsoft® Office Outlook®, available from Microsoft Corporation of Redmond, Wash., or a Google® calendar available from Google Inc. of Mountain View, Calif. This allows the user to keep all of his or her appointments in one location. The schedule **504** may also allow the user to create a custom calendar specific to the location-based notification service **110**. The custom calendar may be specific to the user, or may be shared with one or more friends, family, coworkers, or other members of the user's social network.

The user profile **500** also includes communication settings **506**, by which a user can manage when and how they want to receive invitations and notifications regarding rallies. In the illustrated embodiment, the communication settings **506** are shown divided into settings relating to invitations and settings relating to notifications. However, in other embodiments, these settings could be grouped together and/or other divisions could be provided (e.g., general settings and temporary settings). For each of the invitation and notification sections in FIG. **5**, the user is given the option to choose to receive the respective communication "always," "never," or "based on schedule." Depending on which of those options the user selects, the user may be presented with additional options. For example, once the user selected to "always" receive invitations, the user is presented with an option to select the desired mode(s) of communication by which the user wishes to receive the invitations (in this case SMS text messages). For notifications, the user has selected to receive notifications "based on schedule," which presents the user with a list of status identifiers. The user is then able to select whether and how notifications should be delivered for each of the listed status identifiers.

For example, if a target recipient is in a "busy" or "out of town" status, no outgoing and/or incoming notification may be sent by or to the target recipient. If the target recipient is in a "work" status, the communication settings may specify that notifications are to be sent to a work email address and a mobile phone, while if the target recipient is in a "parenting" status, the communication settings may specify that notifications are to be sent to a home phone and/or mobile device number. If the target recipient is in "available" status, the location-based notification service **110** may determine the appropriate communication channel by which to communicate with the user. While not shown in FIG. **5**, the appropriate communication channel, may be further defined by the general communication settings, and may be time dependent (e.g., between 6:00 and 7:00, the target wants to be called, otherwise the target prefers to be emailed), rally point specific (e.g., the target prefers to be called for certain rally points and emailed for other rally points), sender specific (e.g., the target recipient prefers to be called by certain senders and emailed by other senders), pattern specific (e.g., the target recipient prefers to be called for senders that the target has not rallied with in a predetermined amount of time, such as a month, and emailed for senders that the target has seen within the predetermined amount of time), size specific (e.g., the target recipient only wants notifications when two or more or of his or her friends are present), distance specific (e.g., do not notify a target recipient if the target recipient is not able to get to the location before the rally ends), and/or dependent upon other factors.

Furthermore, certain circumstances may override the general communication settings. For example, a hyper-rally may be a notification initiated after a certain number of principals (e.g., owners of rally points to which the target has subscribed, target recipients of an active rally point, or combinations thereof, etc.) are indicating that they are travelling to and/or at a rally point location. For example, if a target having a hyper-rally threshold of two principals has indicated that he is busy he may not receive a first notification that a first principal has entered a rally point location. However, if a second principal sends a notification that he has also entered the rally point location, the hyper-rally threshold is met and the target may receive a notification despite the fact that the target's status is busy.

In addition to the general communication settings **506** shown in FIG. **5**, a user may have temporary communication settings. For example, a sender may temporarily stop generating automated (or being prompted to generate semi-automated) notifications for a predetermined period of time after the sender sets a "suspend publishing" option. Similarly, a target may stop receiving notifications for a predetermined period of time after the sender sets a "suspend subscriptions" option. These temporary communication settings may override all other communication settings, although a target may still be able to communicate directly with the sender without using the location-based notification service **110**. Temporary communication settings, when present, may be shown as another category of communication settings.

The user profile **500** also includes a list of current party members **508** that are with the user. An aspect of the location-based notification service **110** is that some people may not have a mobile computing device (e.g., a cell phone). For example, a child may not have a cell phone. However, the presence of the child changes the types of communications that a person may want to receive. For example, two fathers may play tennis periodically, sometimes with children and sometimes without children. Providing the information in a notification about whether the sender's children are present provides the target recipient with a better understanding of the situation. The presence or absence of children can also be used to influence communication settings. For example, if a parent has specified or the location-based notification service **110** has detected that he is in "parenting" status, notifications that specify children are not present could be treated differently (e.g., not delivered or delivered via a lower attention communication channel) than notifications that specify that children are present.

The user profile **500** may also include location publication settings **510**, which indicate whether and how a user's location should be published to the location-based notification service **110** and to other users. As discussed above, location publication can be performed automatically without user input, semi-automatically after prompting a user for approval to publish the location, or manually in response to a user request to publish current location information. In various implementations, publication of location information can be initiated by the client device **300** ("push publication") or the location-based notification service **110** ("pull publication"). Depending on the type of location publication employed, the location publication settings **510** may be stored at the client device **300**, the location-based notification service **110**, or both.

Illustrative Location-Based Notification System Flow

FIG. **6** is a system flow diagram showing an illustrative method **600** usable by a sending device, a location-based notification service, and one or more target recipient devices to implement a location-based notification. The method **600** may, but need not necessarily, be implemented using the client device **300** as sending target device **300**A and target recipient device **300**B, and using the location-based notification service **110**.

In this particular implementation, the method **600** begins at **602** with receipt of user profiles from the sender device **300**A and the target recipient device **300**B by the location-based notification service. As noted above, these user profiles are typically populated and transmitted during initial creation of a user account, and may be updated anytime thereafter. The user profiles of the sender and the target recipient are shown as occurring simultaneously, but in practice the user profiles will typically be received sequentially. Also, as noted above, it is possible for a rally point to be established and a notification to be sent to a target recipient prior to the target recipient providing a user profile or even having created an account. In that case, the target recipient may be invited to create a user account along with a rally point invitation.

In the case of distributed embodiments (i.e., not purely web-based), in which at least some of the location-based notification functionality is performed at the client device side, a location-based notification service module **330** or application may, at **604**, be downloaded to the sender device **300**A and the target recipient device **300**B. These client-side location-based notification modules **330** provide a font-end interface with the location-based notification service **110**.

At **606**, the location based notification service **110** receives a request to establish a rally point from the sender device **300**A. As discussed above, the rally point request may include an identification of the sender, a location for the rally point, identification of one or more target recipients to be notified when the sender is at the rally point, a duration that the sender expects to stay at the rally point, one or more

party members expected to be with the sender at the rally point, a boundary of the rally point, and/or a sensitivity of the rally point specifying an amount of time the sender is to be present at the rally point before a notification is sent.

At **608**, the location based notification service **110** establishes a rally point based on the rally point request, and stores the rally point in the rally point database **418**. Once the rally point is established, at **610**, the notification module **426** of the location based notification service **110** sends a rally invitation to the target recipient device **300**B and, at **612**, receives an acceptance of the invitation.

Upon receiving acceptance of the invitation, at **614**, the rules engine **424** of the location based notification service **110** queries the user profile database **416** to determine communication settings of the sender. At **616**, the location based notification service **110** may notify the sender device **300**A of the acceptance based on the sender's communication settings.

Subsequently, at **618**, the sender travels to the rally point. At **620**, the sender device **300**A then communicates current location information of the sender device (automatically, semi-automatically, or manually) in accordance with location publication settings in the sender's user profile. The location based notification service **110** then, at **622**, compares the current sender location to rally points stored in the rally point database **418**, and, at **624**, determines that the sender is at or en route to the rally point. When two rally points are near each other (or partially/completely overlapping), the location based notification service **110** can prompt and ask a sender which of the rally points the sender intends to activate. Additionally, a sender may specify a different rally point to activate in response to a semi-automatic notification (e.g., "publish" or "change rally point" may be the option).

A party may be determined to be en route to a rally point if they are subscribed to a rally point, travelling in the direction of the rally point location, and travelling outside of a common travel pattern (e.g., a predetermined distance or percentage of distance outside of a polygon formed by connecting the top X (e.g., 5) most frequently visited locations). In that case, the location based notification service **110** may prompt and ask the sender whether the sender is heading to the rally point. If the sender confirms that the rally point is the destination, the location based notification service **110** may notify the target recipients corresponding to the rally point. The location based notification service **110** may additionally provide information about the current location of the sender, the anticipated time of arrival, etc.

Next, at **626**, the rules engine **424** of the location based notification service **110** queries the user profile database **416** to determine communication settings of the target recipient. At **628**, the location based notification service **110** may notify the target recipient device **300**B that the sender is at or en route to the rally point. Rally points may have active times. For example, a rally point may be set up that is only available during the weekends. Available times of the rally point may be used in determining whether and how to send an outgoing notification to the target recipient, and notifications may not be sent during non-available times.

The current location of the target recipient may be another factor in determining whether and how to send an outgoing notification to the target recipient. For example, if the target recipient is 30 minutes away from a rally point location, and the anticipated duration of the rally is 30 minutes, the location based notification service **110** may not provide a notification or provide the notification in a less attention demanding modality (e.g., send an email instead of making a phone call). The determination of the time gap between where a user is and where a rally is occurring may be based on estimated time of travel, estimated time based on past occurrences (e.g., if the target needs to pick his children up from daycare on Tuesday night, the location-based notification service **110** will include this time in determining whether to provide an outgoing notification), and/or other appointments on his or her calendar.

At **630**, the target recipient may acknowledge receipt of the notification. At **632**, the target recipient may begin traveling toward the rally point. Acknowledging receipt of the notification, traveling toward, or arriving at the rally point may cause the location based notification service **110** to, at **634**, make the rally point active. Acknowledging receipt of the notification may take the form of, for example, responding affirmatively to a prompt, such as "Do you want to activate a Location X rally?" where X is the name of a rally point. At **636**, the location based notification service **110** may receive location information from the target recipient device **300**B (automatically, semi-automatically, or manually).

The location based notification service **110** then, at **638**, compares the current target recipient location to the active rally point location stored in the rally point database **418**, and, at **640**, determines that the target recipient is at or en route to the rally point. Next, at **642**, the rules engine **424** of the location based notification service **110** queries the user profile database **416** to determine communication settings of the sender. At **644**, the location based notification service **110** may notify the sender device **300**A that the target recipient is at or en route to the rally point.

Once a rally point is active, at **646**, the location-based notification service **110** may facilitate sharing of rendezvous information between the sender device **300**A and a target recipient device **300**B to help the users locate one another at the rally point. Additionally or alternatively, the location-based notification service **110** may, at **648**, establish a communication session between the sender device **300**A and the target recipient device **300**B to further aid the users in locating one another. The communication session may be initiated by the location-based notification service **110** prompting the sender to establish the call, prompting the target recipient to initiate the call, or by automatically initiating the call to both parties.

Illustrative Rally Proposal Process

FIG. **7** is a flowchart showing an illustrative rally point proposal method **700** that may be used to automatically propose a rally at a time in the future at a rally point where a group of people has met before. The method **700** may, but need not necessarily, be implemented using the location-based notification service **110**.

According to one illustrative example, at **702**, the location-based notification service **110** monitors multiple users' locations over time. At **704**, the location-based notification service **110** determines locations at which the multiple users have met before. These previous meetings could be based in location histories of the users and/or histories of previous rallies attended by the users.

Proposed rallies can be initiated by a user or proposed by the location-based notification service **110** (e.g., on a periodic basis, after a certain amount of time has elapsed since two or more people have not met at a rally or otherwise, etc.). At **706**, the method checks to see if a user has requested a rally proposal. If yes, the method proceeds to generate a rally proposal as described below. If not, the method pro-

ceeds, at **708**, to check whether a predetermined time threshold has passed since a last meeting with the multiple users. If no, the method returns to operation **706** to check if a user has requested a rally proposal. If yes at **708**, then the method proceeds, at **710**, to generate a rally proposal taking into account a time that has passed since a last meeting of the multiple users, a weather forecast, schedules of the multiple users, locations of previous rallies or other meetings, explicit preferences of the users, implicit preferences of the users (based on rallies that a user has attended/declined), and the like.

Once the rally proposal has been generated, the rally proposal may be sent, at **712**, to each of the parties according to their communication settings. The rally proposal may be accepted/subscribed-to just like any other invitation described herein, and parties may be notified when one or more of the parties is at or en route to the rally point in the same manner as other notifications described herein.

Illustrative Use Case

FIG. **8** is a schematic diagram of showing a series of actions of a user and corresponding illustrative actions performed by a location-based notification service in response to the actions of the user. FIG. **8** illustrates one example use case that highlights several of the features described above. In this scenario, a sender ("Mike") has previously established two rally points, a first rally point **800** at the park near his home, and a second rally point **802** at the gym where he works out. Mike, Aunt May, Joe, and Frank all subscribe to the location-based notification service **110**, and all have user profiles stored in the system. Aunt May, Joe, and Frank have all subscribed to the first rally point **800**, and Joe and Frank have both subscribed to the second rally point **802**.

At T**1**, mike leaves work and heads for the park where he plans to meet his kids, Kate and Bill. Mike has automatic location publishing turned on, so his location is continuously being updated with the location-based notification service **110**.

At time T**2**, Mike enters the park and arrives at the first rally point **800**, where he plans to meet his kids. Upon Mike's arrival at the first rally point **800**, an alert is posted to his profile in the location-based notification service **110**. Aunt May, who has been watching the Mike's kids, receives a notification that Mike has arrived at the park, so she heads to the park to drop the kids off. Joe is just sitting down to dinner, so he is probably not interested in this information and does not receive any type of notification. Frank's kids are good friends with Mike's kids, so Frank is interested in rallies at the park that include Mike's kids. Since Mike's kids are not yet with him, Frank also does not receive any notification at T**2**.

At T**3**, Aunt May arrives at the first rally point **800** and drops of Mike's kids Kate and Bill. Mike quickly updates his profile to change his party information to reflect that Kate and Bill are now with him Since Mike now has his kids with him, Frank is notified that Mike and his kids are at the park. Frank is on his way home with the kids. He has an hour to kill before dinner, so he decides to head to the park after he gets the automated call from the location-based notification service **110** informing him that Mike is at the park with his kids. After Frank arrives at the park, an alert is posted to his profile, and some of Frank's friends are notified. Also, because there are two of Joe's friends at the park now, the location-based notification service **110** sends Joe an email despite the fact that Joe is in the middle of dinner.

After about an hour, Mike and his kids leave the park and head home for dinner. After dinner, at T**4**, Mike suspends location publishing and updates his profile to show that his kids are no longer with him and heads to the gym to work out.

At T**5**, Mike arrives at the gym. Since Mike's location publishing feature is suspended, no one is notified that Mike is at the gym. After working out, Mike decides, at T**6**, that he would like to play a game of basketball, so he manually updates his location information by pressing a dedicated location publication control. Frank and Joe are promptly notified that Mike is at the gym, and both decide to meet Mike at the gym.

Upon arriving at the gym, at T**7**, the second rally point **802** becomes active and rendezvous information is shared between Mike and Joe's client devices. The rendezvous information indicates that Mike is in the gym, so Joe is able to more easily locate Mike. Further, Mike receives a notification when Joe and Frank arrive, which prompts Mike to initiate a communication session, which Mike does to ask Joe and Frank to bring him an extra towel and meet him at the basketball court.

Illustrative systems and methods of a location-based notification are described above. Certain features of the systems and acts of the methods need not be arranged in the order described, may be modified, and/or may be omitted entirely, depending on the circumstances. Also, any of the acts described above with respect to any method may be implemented by a processor or other computing device based on instructions stored on one or more computer-readable storage media.

Conclusion

Although the disclosure uses language specific to structural features and/or methodological acts, the invention is not limited to the specific features or acts described. Rather, the specific features and acts are disclosed as illustrative forms of implementing the invention.

What is claimed is:

1. One or more computer-readable storage devices storing computer-executable instructions that, when executed by one or more processors of a computing device, configure the one or more processors to perform acts comprising:

receiving, from a sender, a request to establish a rally point, the request including i) a location for the rally point, ii) an identification of the sender, iii) an identification of party members accompanying the send to the rally point, iv) identification of one or more target recipients to be notified of the rally point, v) a duration to maintain the rally point, and vi a duration that the sender of the request to establish the rally point will stay at the rally point;

establishing the rally point at least partly in response to receiving the request;

storing the rally point in memory in association with the location and the identifications of the one or more target recipients;

determining that one or more of the one or more target recipients are at the rally point or en route to the rally point; and

notifying the other one or more target recipients that the determined one or more of the one or more target recipients is at the rally point or en route to the rally point.

2. The one or more computer-readable storage devices of claim 1, wherein the location comprises a geographical coordinate location.

3. The one or more computer-readable storage devices of claim 1, wherein the location comprises a point of interest or street address.

4. The one or more computer-readable storage devices of claim 1, wherein the notifying the acts further comprising:

receiving an acceptance of the rally invitation from at least one of the one or more target recipients.

5. The one or more computer-readable storage devices of claim 1, wherein the request to establish the rally point further includes vii) a boundary of the rally point, and viii) a sensitivity of the rally point specifying an amount of time at least one of the one or more target recipients is to be present at the rally point before a notification is sent.

6. The one or more computer-readable storage devices of claim 1, the acts further comprising:

receiving a recipient profile from one of the target recipients specifying communication settings for the target recipient.

7. The one or more computer-readable storage devices of claim 6, wherein the recipient profile specifies available communication modes usable to send notifications to the target recipient, and times at which the recipient is available to receive notifications.

8. The one or more computer-readable storage devices of claim 7, wherein the recipient profile specifies a particular communication mode to be used for a notification, based at least in part on a date and time of the notification and/or a location of the target recipient.

9. The one or more computer-readable storage devices of claim 6, the acts further comprising:

sending a notification to the target recipient when the at least one of the one or more target recipients is present at the rally point.

10. The one or more computer-readable storage devices of claim 9, wherein the notification is sent to the target recipient according to the communication settings specified in the recipient profile for the target recipient.

11. The one or more computer-readable storage devices of claim 9, wherein the notification includes a duration that the at least one of the one or more target recipients expects to stay at the rally point.

12. A method implemented at least partially by one or more processor, the method comprising:

receiving, from a sender, a request to establish a rally point, the request including i) a location for the rally point, ii) an identification of the sender, iii) an identification of party members accompanying the send to the rally point, iv) identification of one or more target recipients to be notified of the rally point, v) a duration to maintain the rally point, and vi a duration that the sender of the request to establish the rally point will stay at the rally point;

establishing the rally point at least partly in response to receiving the request;

storing the rally point in memory in association with the location and the identifications of the one or more target recipients;

determining that one or more of the one or more target recipients are at the rally point or en route to the rally point; and

notifying the other one or more target recipients that the determined one or more of the one or more target recipients is at the rally point or en route to the rally point.

13. The method of claim 12, wherein the location comprises a geographical coordinate location.

14. The method of claim 12, wherein the location comprises a point of interest or street address.

15. The method of claim 12, wherein the notifying the acts further comprising:

receiving an acceptance of the rally invitation from at least one of the one or more target recipients.

16. The method of claim 12, wherein the request to establish the rally point further includes vii) a boundary of the rally point, and viii) a sensitivity of the rally point specifying an amount of time at least one of the one or more target recipients is to be present at the rally point before a notification is sent.

17. The method of claim 12, further comprising:

receiving a recipient profile from one of the target recipients specifying communication settings for the target recipient.

18. The method of claim 17, wherein the recipient profile specifies available communication modes usable to send notifications to the target recipient, and times at which the recipient is available to receive notifications.

19. A system comprising:

a memory;

one or more processors coupled to the memory to perform acts comprising:

receiving, from a sender, a request to establish a rally point, the request including i) a location for the rally point, ii) an identification of the sender, iii) an identification of party members accompanying the send to the rally point, iv) identification of one or more target recipients to be notified of the rally point, v) a duration to maintain the rally point, and vi a duration that the sender of the request to establish the rally point will stay at the rally point;

establishing the rally point at least partly in response to receiving the request;

storing the rally point in memory in association with the location and the identifications of the one or more target recipients;

determining that one or more of the one or more target recipients are at the rally point or en route to the rally point; and

notifying the other one or more target recipients that the determined one or more of the one or more target recipients is at the rally point or en route to the rally point.

20. The system of claim 19, wherein the request to establish the rally point further includes vii) a boundary of the rally point, and viii) a sensitivity of the rally point specifying an amount of time at least one of the one or more target recipients is to be present at the rally point before a notification is sent.

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